

**Notice of Allowability**

Application No.

09/866,859

Examiner

Blaine Basom

Applicant(s)

LIEBERMAN ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicants' amendment, received 12/23/2005.
2. ☒ The allowed claim(s) is/are 85.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

*Allowable Subject Matter*

Claim 85 is allowed. The following is an examiner's statement of reasons for allowance:

The prior art (e.g. U.S. Patent No. 6,281,878, U.S. Patent No. 6,690,357, and U.S. Patent No. 6,614,422) provides various examples of projecting an image of an input device, such as a keyboard, onto an inert surface, and detecting user's interaction with the input device. As a projector, the prior art (i.e. U.S. Patent No. 6,281,878, U.S. Patent No. 6,614,422, U.S. Patent No. 6,435,682, and U.S. Patent No. 6,424,338) teaches implementing a solid state light source which illuminates, via a negative lens, a mask which defines the image of at least part of a keyboard, a touchpad and pair of click buttons, the solid state light source comprising a diode laser having a natural astigmatism which obviates a need for a condensing lens upstream of the mask, the mask being pre-distorted in order to compensate for optical distortions in projection, and the mask comprising a dynamic mask comprising a spatial light modulator, whereby the projector comprises a mirror that directs light from the mask onto an inert surface. In order to detect the user's interaction with the input device, the prior art (i.e. U.S. Patent No. 6,281,878, U.S. Patent No. 6,614,422, U.S. Patent No. 6,435,682, U.S. Patent No. 6,424,338, and U.S. Patent No. 5,182,659) teaches implementing a two-dimensional sensor comprising an infrared illuminator comprising a solid state light source which directs light via a focusing lens and a mirror onto a cylindrical reflecting element which produces radially directed illumination about a longitudinal axis of the cylindrical reflecting element and extends over 180 degrees, generally in a plane parallel to the surface displaying the keyboard, the radially directed illumination having a narrow spread in a direction perpendicular to the inert surface. The prior art further teaches detecting light reflected from a user interacting with the projected image of the keyboard

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via an array of discrete sensing elements, and a lens operative to image a region overlying each of a plurality keyboard locations onto a corresponding sensing element in the array. The prior art, however, does not explicitly teach implementing such a two dimensional sensor with a line light source and a scanning mirror, which reflects a line of light produced by the line light source in a direction generally perpendicular to the plane of the inert surface, as is claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blaine Basom whose telephone number is (571) 272-4044. The examiner can normally be reached on Monday through Friday, from 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached on (571) 272-4048. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

btb  
3/20/2005

A handwritten signature in black ink, appearing to read "Tadene Hill", is written over the typed name.